

L Number	Hits	Search Text	DB	Time stamp
1	0	(HSG or (hemispheric adj grain)) same (phase with change)	USPAT; US-PGPUB	2004/05/01 09:15
2	103	(HSG or (hemispheric adj grain)) same (phase)	USPAT; US-PGPUB	2004/05/01 10:05
3	91	((HSG or (hemispheric adj grain)) same (phase)) and @ad<20011231	USPAT; US-PGPUB	2004/05/01 10:15
4	9	(HSG or (hemispheric adj grain)) same (phase)	EPO; JPO; DERWENT; IBM_TDB	2004/05/01 09:24
5	1	("6309975").PN.	USPAT; US-PGPUB	2004/05/01 09:38
6	1	(HSG or (hemispheric adj grain)) same (chalcogenide)	USPAT; US-PGPUB	2004/05/01 13:12
7	1	(HSG or (hemispheric adj grain)) same (chalcogenide or "GeSbTe" or "TeGeSb")	USPAT; US-PGPUB	2004/05/01 10:06
8	11	(HSG or (hemispheric adj grain)) and (chalcogenide or "GeSbTe" or "TeGeSb")	USPAT; US-PGPUB	2004/05/01 10:15
9	333	(phase with change) same adhesion	USPAT; US-PGPUB	2004/05/01 10:16
10	276	((phase with change) same adhesion) and @ad<20011231	USPAT; US-PGPUB	2004/05/01 13:14
11	258	(phase near3 change) same adhesion	USPAT; US-PGPUB	2004/05/01 10:16
12	211	((phase near3 change) same adhesion) and @ad<20011231	USPAT; US-PGPUB	2004/05/01 10:16
13	467	(HSG or (hemispheric adj grain)) same ((programmable) or (phase adj changeable) or (recordable) or (recording) or (memory))	USPAT; US-PGPUB	2004/05/01 13:20
14	211	(HSG or (hemispheric adj grain)) with ((programmable) or (phase adj changeable) or (recordable) or (recording) or (memory))	USPAT; US-PGPUB	2004/05/01 13:14
15	170	((HSG or (hemispheric adj grain)) with ((programmable) or (phase adj changeable) or (recordable) or (recording) or (memory))) and @ad<20011231	USPAT; US-PGPUB	2004/05/01 13:23
16	18849	(recording or (phase adj (change or changeable))) with (adhesion or adhesive or interface or interfacial)	USPAT; US-PGPUB	2004/05/01 13:22
17	16164	(recording or (phase adj (change or changeable))) with (adhesive or interface or interfacial)	USPAT; US-PGPUB	2004/05/01 13:22
18	4374	(recording or (phase adj (change or changeable))) with (adhesive)	USPAT; US-PGPUB	2004/05/01 13:22
19	139	(phase adj (change or changeable)) with (adhesive)	USPAT; US-PGPUB	2004/05/01 13:50
20	101	((phase adj (change or changeable)) with (adhesive)) and @ad<20011231	USPAT; US-PGPUB	2004/05/01 13:50
21	3	((phase adj (change or changeable)) with (adhesive)) and @ad<20011231 and (adhesive with (silicon or HSG))	USPAT; US-PGPUB	2004/05/01 13:25
22	0	((phase adj (change or changeable)) with (adhesive)) and @ad<20011231 and (adhesive with (hemispheric))	USPAT; US-PGPUB	2004/05/01 13:25
23	0	((phase adj (change or changeable)) with (adhesive)) and @ad<20011231 and (adhesive with (hemispherical))	USPAT; US-PGPUB	2004/05/01 13:25
24	50	(phase adj (change or changeable)) with (adhesive)	EPO; JPO; DERWENT; IBM_TDB	2004/05/01 13:25
25	2	((phase adj (change or changeable)) with (adhesive)) and (adhesive with (silicon or HSG))	EPO; JPO; DERWENT; IBM_TDB	2004/05/01 13:26
26	52	(phase adj (change or changeable)) with (interfacial)	USPAT; US-PGPUB	2004/05/01 13:54
27	28	((phase adj (change or changeable)) with (interfacial)) and @ad<20011231	USPAT; US-PGPUB	2004/05/01 13:50

28	7	(phase adj (change or changeable)) with (interfacial)	EPO; JPO; DERWENT; IBM TDB	2004/05/01 13:55
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US-PAT-NO: 6566700

DOCUMENT-IDENTIFIER: US 6566700 B2

TITLE: Carbon-containing interfacial layer  
for phase-change  
memory

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Abstract Text - ABTX (1):

A phase-change memory cell may be formed with a carbon-containing interfacial layer that heats a phase-change material. By forming the phase-change material in contact, in one embodiment, with the carbon containing interfacial layer, the amount of heat that may be applied to the phase-change material, at a given current and temperature, may be increased. In some embodiments, the performance of the interfacial layer at high temperatures may be improved by using a wide band gap semiconductor material such as silicon carbide.

Application Filing Date - AD (1):

20011011

TITLE - TI (1):

Carbon-containing interfacial layer for phase-change memory

Detailed Description Text - DETX (4):

A carbon-containing interfacial layer 20 may be positioned between the phase-change material layer 24 and the insulator 16. In one embodiment, a cylindrical sidewall spacer 22 may be defined within a tubular pore that is

covered by the carbon-containing interfacial layer 20 and the phase-change material layer 24.

Detailed Description Text - DETX (10):

In some embodiments of the present invention, a layer (not shown) may be provided to improve the adhesion between the phase-change material layer 24 and the carbon-containing interfacial layer 20. Suitable adhesion promoting layers may include any conductive materials including titanium, titanium nitride and Tungsten, as a few examples.

Detailed Description Text - DETX (15):

Through the use of a carbon-containing interfacial layer 20, the resistivity of the phase-change material heater may be substantially increased while at the same time improving the heating performance of the heater at high temperatures. The heater effectively includes the series combination of the lower electrode 14 and the carbon-containing interfacial layer 20. However, a series resistive combination is dominated by the element with the higher resistance, which may be the carbon-containing interfacial layer 20 in some embodiments. As a result, the resistance of the series combination of layers 20 and 14 may be dominated by the resistance of the interfacial layer 20.

Claims Text - CLTX (5):

5. The memory of claim 4 wherein said phase-change material is formed on said carbon-containing interfacial layer and in said pore.

Claims Text - CLTX (7):

7. The memory of claim 6 wherein said sidewall spacer is positioned between said interfacial layer and said phase-change material.

Claims Text - CLTX (9):

9. An electronic device comprising: digital signal processor; and a memory coupled to said processor, said memory including a surface, a silicon carbide interfacial layer over said surface and a phase-change material over said silicon carbide layer.